

Agnikarma with Kshaudra (honey) along with adjuvant Ayurveda therapy in the management of trigger finger- A single case report

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Abstract

Trigger finger (TF) mechanical ailment results from a stenotic A1 pulley that has lost its gliding surface, producing friction and nodular change in the tendon. This results in pain and tenderness at the site of the A1 pulley which further progresses into catching and then locking of the finger. A definite cure of TF in the current mainstream is the surgical release of the A1 pulley. A 71-year-old male patient with a TF presented with pain, swelling, and locking of the left hand's middle finger. The patient was considered as suffering from *Snayugata Vata* as an *Ayurveda* diagnosis and treated with *Kshaudra Agnikarma* (therapeutic burn with honey) on daily basis at the morning for 30 days and *Bandhana* (bandages) for 2 months along with *Dashmoola Kwatha* orally 20 mL empty stomach twice a day and *Haritaki Churna* 5 g at night with lukewarm water orally for 2 months. The patient was clinically assessed and Green's Severity Scores of TF showed remarkable improvement after the completion of treatment. This single case report demonstrates that the case of TF can be successfully managed with *Kshaudra Agnikarma* – A minimally invasive nonsurgical therapeutic intervention using *Ayurveda* principles.

Keywords: Ayurveda, Bandhana, Dashamoola Kwatha, Kshaudra Agnikarma, trigger finger

Introduction

Trigger finger (TF) is a very common entity encountered in hand disability. A TF is clinically characterized by painful snapping or locking when flexing the finger.^[1] TF may occur due to hypertrophy of the retinacular sheath at the intersection of the tendon generally at A1 pulley which leads to narrowing of A1 pulley and subsequently prevents the flexor tendon from gliding through the ligament's pulley. It causes a sudden release or locking of a finger during flexion or extension, pain, and functional limitation of the finger.^[2] The specific etiology of TF is still not clear, but there are many theories that are claimed to be a cause of TF. Occupations related to repetitive finger movements require extensive gripping and hand flexions, such as plumbing or hand-held tools.^[3] Diabetes is also reported as a high-risk factor for developing TF.^[4] Incidence of TF is most commonly seen in the middle age between 50 and 60 years of age.^[3] TF is presented with a history of pain, morning stiffness, swelling, and tenderness along with palpable nodular thickening on the metacarpophalangeal (MCP) area or proximal interphalangeal (PIP) area.^[5] The conservative

management of TF in contemporary science includes oral non-steroidal anti-inflammatory drugs (NSAIDs), analgesics, long-acting hydrocortisone, splinting, physiotherapy, and extracorporeal shockwave therapy. If TF is unresponsive to conservative therapies, then lastly surgical treatment involves the percutaneous and open release of the A1 pulley.^[6]

In *Ayurveda*, it can be correlated with *Snayugata Vata* (vitiating *Vata* in ligaments) under the heading of *Vatavyadhi* (disorders due to *Vata*) explained by Acharya Sushruta. *Snayugata Vata* presents with *Stambha* (stiffness), *Shula* (pain), and *Akshepana* (inability of movement).^[7] Acharya Charaka has also been mentioned as *Snayupradoshaja Vikara* (diseases of ligaments) as *Stambha*, *Sankocha* (contraction),

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How to cite this article: Ganatra RJ, Dudhamal TS. *Agnikarma* with *Kshaudra* (honey) along with adjuvant *Ayurveda* therapy in the management of trigger finger - A single case report. AYU 2021;42:164-8.

Submitted: 06-Sep-2021

Revised: 01-Apr-2022

Accepted: 23-Feb-2023

Published: 17-May-2023

Access this article online

Quick Response Code:



Website:
www.ayujournal.org

DOI:
10.4103/ayu.ayu_299_21

Granthi (knuckle), and *Sphurana* (twitching).^[8] Acharya Sushruta has described a variety of *Agnikarma Dahana Upakarana* (instruments for therapeutic heat therapy) as per disease conditions. In the context of *Sira* (blood vessels), *Snayu* (tendons), *Asthi* (bones), and *Sandhi Gata Vikara* (diseases of joints), Sushruta has mentioned *Kshaudra* (honey), *Guda* (jaggery), and *Sneha* (oil/ghee) as *Dahana Upakarna*.^[9] The standard treatment for TF is operative procedures which are least preferred by the patients. Hence, there is a need to search for effective treatment modalities in alternative medicine. This case of TF was successfully treated with *Kshaudra Agnikarma* and adjuvant Ayurvedic management with a positive outcome.

Case report

A 71-year-old retired male patient, a plumber by occupation with a nature of work where overuse of fingers was involved, presented with 2-year history of gradually progressive painful locking of the middle finger of the left hand. The patient also had complaints of early morning stiffness and swelling over the base of the left middle finger. Symptoms are aggravated by repetitive finger movements and relieved after coconut oil massage on it. The patient had a history of cerebrovascular accident before 5 years. The patient is a known case of hypertension for 5 years and taking antihypertensive medication, i.e. Telimet 40 (Telmisartan 40 mg + hydrochlorothiazide 12.5 mg) once a day for the same. There was no other past history of trauma noted by the patient. The patient had undergone orthopedic consultations in a government hospital for 6 months and conservative management was prescribed for TF in the form of NSAIDs and analgesics. He was not taking any type of medication for TF at the time of consultation in the Ayurveda outpatient department.

Clinical findings

On general examination, the patient was fit and well oriented. All the vitals of the patient were within normal range. On inspection, swelling (Grade II) was noted on the left middle finger. The patient demonstrated active flexion of the middle finger leading to the locking of the left-hand middle finger at the MCP and PIP joint. [Figure 1] Passive extension of the finger was done by the patient with another hand. Other fingers of the hand were having normal function. On palpation, tenderness (Grade II) and a small palpable nodule were noted over the flexor tendon sheath at the MCP joint and PIP joint in the left middle finger. Sensory and motor examinations of both hands were normal. On the basis of clinical examination, the patient was diagnosed with a TF (Grade III severity according to Green's classification).^[10] [Table 1]

Diagnostic focus and assessment

In Ayurveda, it is diagnosed as *Snayugata Vikara* under the heading of *Vatavyadhi*. Dupuytren's contracture, flexor sheath tumor, MCP joint sprain, MCP joint osteoarthritis, and posttraumatic tendon entrapment on the metacarpal



Figure 1: Before treatment

Table 1: Green's classification of trigger finger

Grade	Description
I	Pain/history of catching
II	Demonstrable catching, but can actively extend the digit
III	Demonstrable locking, requiring passive extension
IV	Fixed flexion contracture

head were the differential diagnosis for the case. In the TF, the flat top toe test was negative which excludes Dupuytren's contracture. The patient had no history of trauma which excludes the diagnosis of MCP joint sprain and posttraumatic tendon entrapment. MCP osteoarthritis was also excluded as the patient did not complain of pain in other MCP joints.

Treatment plan

Sushruta has described plenty of treatments for *Snayugata Vikara* as *Snehana* (oleation), *Upanaha* (poultice), *Agnikarma* (therapeutic heat), *Bandhana* (bandaging), and *Mardana* (massaging).^[11] Here, *Kshaudra Agnikarma* and *Bandhana* as local treatments were adopted considering the site and nature of the disease.

Intervention

The patient was treated with 30 sittings of *Kshaudra Agnikarma* on regular basis at morning for 1 month along with *Bandhana* afterward in the form of a TF splint advised for 2 months. Along with this para-surgical management, selected Ayurvedic oral medications – *Dashamoola Kwatha* (coarse powder of compound Ayurvedic formulation) 20 mL a day at empty stomach twice and *Haritaki Churna* (*Terminalia chebula* Retz.) 5 g at bedtime with lukewarm water – were also given. These oral medicines were given for 2 months.

The procedure of Kshaudra Agnikarma

Agnikarma was performed in three stages, i.e., *Purvakarma* (preoperative procedure), *Pradhankarma* (operative procedure), and *Paschatkarma* (postoperative procedure).

Purvakarma (preoperative procedure)

The patient was advised to take *Snigdha* (unctuous) diet while coming for *Agnikarma*. Informed written consent was taken from the patient. All the equipment required for *Agnikarma*, i.e., *Kshaudra*, *Ghrita*, steel bowl, glass pipette, gas burner, gauze, and *aloe vera*, was kept ready. [Figure 2]

Pradhanakarma (operative procedure)

A sitting position was given to a patient with left-hand rest on the table. *Kshaudra* (honey) was heated in a steel bowl till frothing (80°) and the temperature was measured by a mercury thermometer. [Figure 3] Then, with the help of a glass pipette, *Kshaudra* was poured in a drop-wise manner on the palmer surface of the left middle finger along the flexor tendon course. About 0.5 cm gaping was maintained between the two *Dagdha Sthana* (burned area). [Figure 4] It was rubbed after 1 min with *aloe vera* pulp to minimize the burning sensation and then mopped with dry gauze.

Paschatkarma (postoperative procedure)

Madhusarpi Abhyanga (massage with equal quantity of honey and ghee) was done for 2 min over *Samyaka Dagdha Vrana* (optimal therapeutic burn). TF splint was kept for the whole day.

Outcome measures and follow up

The patient was assessed every day for an improvement in signs and symptoms. The swelling was completely reduced after 5 days of intervention. Pain and tenderness subsequently reduced day by day and on 7 sittings of *Agnikarma*, tenderness grade became 0 from Grade II. Stiffness of the middle finger decreased gradually every day and it was completely diminished after 10 sittings of *Agnikarma*. The patient was able to actively extend the finger without support of another hand after 13 sittings of *Agnikarma*. After completion of 30 sittings of *Kshaudra Agnikarma*, it was noted that the patient had occasionally locked the left middle finger. The patient attained the Grade I (history of catching) according to Green's classification for assessment of TF. [Figure 5] On a follow-up observation of 9 months, the patient had no pain and no locking of the middle finger. [Table 2]

Discussion

TF is also known as stenosing tenosynovitis. In this case, the patient had a long history of occupation that involves repetitive and prolonged gripping and grasping activity with fingers. Swelling in the flexor tendon is often due to repetitive trauma which leads to aseptic inflammation, fibrosis, and thickening of the tendon.

Ayurveda diagnosis of this condition can be correlated with *Snayugata Vikara* as *Vatavyadhi*. There are many etiological factors that end in the vitiation of *Vata*. Vitiated *Vata* either follows *Dhatukshayajanya* (depletion of body tissue) or *Margavaranaajanya* (obstruction in the natural course of *Vata*) *Samprapti* (disease course) for producing disease. The aggravated *Vata* causes *Margavarana* in particular *Snayu*



Figure 2: Materials for *Kshaudra Agnikarma*



Figure 3: Heating of *Kshaudra*



Figure 4: *Kshaudra Agnikarma*

which further vitiates *Sthanika Kapha* (localized *Kapha*).^[12] This vitiated *Vata* and *Kapha* may lead to the manifestation of all these symptoms of *Snayugata Vikara* or TF. *Agnikarma* is a major treatment modality in *Vata-Kaphaja Vikara* (diseases caused by vitiated *Vata* and *Kapha*).

Table 2: Timeline

Year	Incidence/intervention
2019	The patient experienced occasional locking of the left middle finger
June 2020	The patient experienced continuous locking of the left middle finger, but it was actively extended
July 2020	The patient was consulted by the orthopedic department of the government hospital for this problem, and he was treated with allopathic conservative medicine for 6 months
January 2021	The patient visited the OPD of Shalya Tantra, ITRA, Jamnagar
January 13, 2021– March 13, 2021	The patient was treated with OPD base <i>Kshaudra Agnikarma</i> along with <i>Bandhana</i> (splint) and oral ayurvedic medicine A total of 30 sittings of <i>Kshaudra Agnikarma</i> was done on regular basis <i>Bandhana</i> was applied for 2 months Ayurvedic medicines such as <i>Dashmoola Kwatha</i> 20 mL empty stomach and <i>Haritaki Churna</i> 5 g HS with lukewarm water were prescribed for 2 months for oral administration
December 14, 2021	Follow-up of the patient was done; there was no evidence of locking of the left middle finger found

OPD: Outpatient department

**Figure 5:** After treatment

As *Snigdha* (unctuous), *Ushna* (hot), *Susksma* (penetrating), and *Ashukari* (fast-acting) *Guna* (qualities) of *Agni* work on vitiated *Vata* and *Kapha Dosha*, it increases *Dhatvagni* (metabolic factor located in *Dhatu*) which causes *Ama Pachana* (metabolism of undigested materials).^[13] All these actions of *Agni* bring *Dhatuamyata* (equilibrium of *Dhatu*) in particular *Sthana* (place) and ultimately in *Sharira* (body). Sushruta has stated *Kshaudra Agnikarma* in *Snyugata Vikara*. *Kshaudra* has a high heat retention capacity, as it is in the form of a liquid medium which causes superficial tissue demolition, resulting in deeper heat penetration through *Sukshma Sira* (minute vessels) compared to *Shalaka Agnikarma* (therapeutic heat with *Shalaka*).^[14]

It has been reported that more than 50°C of temperature is required for the melting of collagen. TF research postulated that the repeated friction and compression between the flexor tendon and the corresponding inner layer of the A1 pulley increases the production of Type III collagen tissue. Heated *Kshaudra* which has a temperature of around 80°C might be responsible for increasing extensibility and melting of collagen tissue at the site of the MCP and PIP joint. This action may relieve the symptoms such as *Stambha*, *Sankocha*, and *Granthi* in TF. Heated *Kshaudra* also stimulates the sensory receptors,

and afferent nerves stimulated by heat may have an analgesic effect by acting on the gate control mechanism in the body.^[15] Therapeutic *Agnikarma* with *Kshaudra* helps in relieving pain, swelling, and stiffness and brings the flexion and extension of a finger without locking in TF.

Bandhana in the form of splinting prevents the friction caused by flexor tendon movement through the affected A1 pulley, thus it may help in relieving morning stiffness, locking in the finger, and relapsing the condition.^[16] *Dashamoola Kwatha* is having *Tridoshaghna* (diminution of all three *Dosha*) properties and is used in all types of *Vatika Vikara* (disorders of *Vata*)^[17] and *Haritaki Churna* is having *Vata Anulomana* (correction of the function of *Vata Dosha*) property.^[18] Both these oral medications are also working as an adjuvant with *Agnikarma* in TF.

Conclusion

This case demonstrates the clinical improvement in the TF. Both *Agnikarma* and *Bandhana* are safe and effective as nonsurgical therapeutic interventions along with oral Ayurvedic medicines in the management of TF. This is a single case report on *Kshaudra Agnikarma* on TF which needs further study on more population to validate the efficacy of an intervention.

Informed consent

Written informed consent was obtained from the patient for publication of this case study.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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